

DIVISION FOR PLANETARY SCIENCES ABSTRACT FORM

Infrared. Spectrophotometry of Io between 3-13 μm .

I). Blaney*, M. Hanner* (Jet Propulsion Laboratory, California Institute of Technology), R. Russell*, D. Lynch*, and J. Hackwell* (Aerospace Corp.)

Infrared observations of Io were collected at the NASA Infrared Telescope Facility, Mauna Kea Hawaii on February 7 and 8, 1993 using the Aerospace Corp. liquid-He-cooled spectrograph. The instrument used two 58-element Blocked Impurity Band (BIB) linear arrays to cover the 3- 13 μm wavelength region with a resolving power of 30 - 120. All spectral elements were observed simultaneously. The central meridian of the disk of Io, ranged between 225° - 260° West longitude on February 7 (Trailing Hemisphere) and between 70° -105° West longitude on February 8 (Leading Hemisphere). The broad spectral range covered contains reflected solar radiation, emission from thermal anomalies (i.e. volcanic regions), and background emission from solar heating of the surface.

Thermal emission from the leading hemisphere varied less than 2% on February 8. Emission from the trailing hemisphere on February 7, increased throughout the night by roughly 30%. The increase in emission with increasing west longitude is consistent with that expected by the volcanic region Loki (309° West longitude, 10° North latitude) approaching the center of the observed disk. The emission levels measured, however, indicate that Loki was in a period of relatively low activity. The absorption feature due to SO₂ frost is present at 4.08 μm . The band depth, measured using the values at 3.47 μm for the continuum and at 4.08 μm for the band minima, was roughly 50% on both the leading and trailing hemisphere. The band depth varied by less than 10% in the regions measured.

Part of this work was done at JPL/ CALTECH, under contract to NASA. *Visiting Scientist at the NASA Infrared Telescope Facility

Run.No. _____ Sess.No. _____
FOR EDITORIAL USE ONLY

ORAL PAPER ☒

POSTER PAPER ☐

PAPER PRESENTED BY? Diana L. Blaney
(Please Write, Must be First Author)

SPECIAL INSTRUCTIONS:

JPL, M/S 183-501

First Author's Address - Print
4800 Oak Grove Drive
Pasadena, CA 91109

Signature of First Author

Signature of Introducing Member,
if Author is a Non-member

E-Mail blaney@scn5.jpl.nasa.gov Phone 818-354-5419

Membership Status (Presenter):

DPS-AAS Member ☒ Non-member ☐ Student ☐

Is your abstract newsworthy, and if so would you be willing to assist our publicity staff with additional material or interviews for reporters.

Yes ☐ No ☒ Maybe ☐

DPS Category No. 16 (From list on separate page)

Abstracts must conform to the AAS style as described on the back of this form. Abstract originals must be typed or glued directly onto this form. The charge for publication of this abstract in the *Bulletin of the American Astronomical Society* will be included in the registration fee for this meeting.

Deadline for receipt of abstract: July 19, 1993.

SUBMIT **ORIGINAL AND FIVE** COPIES TO:

DPS Abstracts
Lunar and Planetary Institute
Publications Services Department
3600 Bay Area Boulevard
Houston, TX 77056-1113

Abstract Submitted for the Division for Planetary Sciences Meeting, Boulder, CO, USA

Date Submitted _____ Form Version 2193

FOR EDITORIAL USE ONLY

BAAS VOL. _____ NO _____ 19